

NOVEMBER/DECEMBER 2025

**23PMB31 — SOIL AND ENVIRONMENTAL
MICROBIOLOGY**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define soil microbiology.
2. What is the rhizosphere?
3. Give an example of symbiotic PGPR.
4. What are endophytes?
5. Define hydrosphere and give an example.
6. What role do bacteria play in the nitrogen cycle?
7. Define solid waste.
8. What is bio-manures?
9. What is Environmental Impact Assessment (EIA)?
10. What does the US EPA regulate?



SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Write a short note on impact of microorganisms on soil fertility.

Or

- (b) State the process of mineralisation of organic and inorganic matter in soil.

12. (a) Briefly explain about PGPR and their application.

Or

- (b) Explain the production and application of any one biofertilizer.

13. (a) State the impact of microorganisms on nitrogen cycle.

Or

- (b) Write a brief note on airborne diseases.

14. (a) Write a brief note on factors affecting solid waste generation rates.

Or

- (b) Discuss about solid waste as food.

15. (a) Illustrate the application of microorganisms in degradation of cellulose.

Or

- (b) Explain briefly about biodeterioration of textiles and Leather.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe in detail about diversity and distribution of major group of microorganisms in soil.

17. Narrate in detail about PGPR.

18. Describe in detail about water Borne diseases and their control measures

19. Illustrate the production and application of composting.

20. Discuss about the pollution control bodies and environmental laws in India